

Vascular Tumors Of Oral Cavity: A Review

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Abstract:

Vascular Tumours Can Occur In Any Part Of The Human Body. They Have Been Described Most To Occur On The Skin Or Dermoid Areas. Occurrence Of Vascular Tumors In The Oral Cavity Uncommon, But When It Happens It Happens In A Myriad Of Forms Of Micromorphological Appearances. Therefore, The Diagnosis And Proper Identification Of Vascular Tumors Is Important Is There Can Be A Very Narrow Difference Between Benign, Aggressive And Malignant Vascular Tumors. This Article Encompasses Briefly The Various Vascular Tumors Which Can Occur In The Oral Cavity.

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I. Introduction:

Vascular tumors are a diverse group of neoplastic conditions that arise from blood vessels. These tumors can be either benign or malignant, and they exhibit a wide range of clinical and pathological characteristics. Due to their unique origin within the vascular system, they present distinct challenges in diagnosis, treatment, and management. Benign vascular tumors, such as haemangiomas and angiomas are typically non-cancerous and commonly affect infants and children. They often manifest as red or purple birthmarks or skin lesions. These tumors tend to resolve spontaneously without intervention, some may require medical attention if they cause complications without intervention, some may require medical attention if they cause complications or aesthetic concerns. Malignant vascular tumors including Kaposiform haemangioendotheliomas, epithelioid haemangioendothelioma and Kaposi's sarcoma, exhibit cancerous behaviour and have the potential to spread to other parts of the body. These tumors can affect individuals of various age groups and may involve the skin, soft tissues or internal organs. Their aggressive nature necessitates prompt diagnosis, appropriate staging and tailored treatment strategies to achieve the best possible outcomes. The diagnosis of vascular tumors often involves a combination of clinical evaluation, imaging studies and histopathological examination of tissue samples. Medical professionals specialising in oncology, dermatology or vascular disorders play a crucial role in accurately identifying and characterising these tumors. Treatment options for vascular tumors can vary depending on the type, location and stage of the tumour and may include surgical resection, embolization, radiation therapy or systemic therapies.

II. Differences between vascular tumors occurring in the skin and in the oral cavity:

Vascular tumors occurring in the oral cavity and skin share a common origin from blood vessels but differ in their specific characteristics and clinical presentations. Here are some key differences between vascular tumors in these two locations:

1. **Prevalence:** Vascular tumors are more commonly found on the skin compared to the oral cavity. Vascular tumors occurring on the skin are relatively common such as cherry angiomas and spider angiomas. In contrast tumors occurring in the oral cavity such as haemangiomas and vascular malformations are relatively rare.
2. **Clinical presentation:** Vascular tumors in the skin are often visible which may appear as small, raised, red or purple lesions. They can be present at birth or develop later in life. In contrast vascular tumors in the oral cavity may be less noticeable and can present as soft, compressible masses or discolouration on the mucosal surfaces. They may cause symptoms like bleeding, pain or difficulty in eating or speaking depending on their location and size.
3. **Types of Tumors:** While some types of vascular tumors can occur in both the oral cavity and skin, there are variations in the prevalence and specific tumor types in each location. For example, haemangiomas, both superficial and deep, can be found in both areas, but oral cavity haemangiomas are relatively uncommon compared to cutaneous haemangiomas. In the oral cavity, other vascular tumors like pyogenic granulomas

(lobular capillary haemangioma's and angiosarcomas may also be encountered, although they are relatively rare.

4. Management and Treatment: The treatment of vascular tumors in the oral cavity and skin may involve different approaches due to the anatomical and functional differences of these areas. In the skin, small vascular lesions may be managed with topical therapies, laser treatments or electrosurgery. Surgical excision or embolization may be considered for larger or symptomatic lesions. In the oral cavity, due to functional and aesthetic considerations, the management of vascular tumors often requires a multidisciplinary approach involving oral surgeons, or interventional radiologists. Treatment options may include surgical excision, laser therapy, sclerotherapy, or embolization depending on the size, location and characteristics of the tumour¹.

III. In the Oral Cavity:

1. Haemangioma's: Although less common compared to their occurrence on the skin. They can present as red or bluish masses or discolouration on the mucosal surfaces of the lips, tongue, palate or gums. Haemangioma's in the oral cavity may cause bleeding, pain, or difficulty in eating or speaking. Hemangiomas can be classified as Capillary, Cavernous or arteriovenous haemangioma's. Capillary haemangioma's are cellular forming small indistinct vascular spaces containing red blood cells. Endothelial cells are large and immature. Cavernous haemangioma's are composed of large thin walled vascular spaces. Arteriole haemangioma's contain thick walled vessels along with thin vessels.

Histopathology: Juvenile/Infantile/Cellular Haemangioma's/ Juvenile Haemangioendothelioma are called so due to increased cellular nature of the lesion. GLUT 1 is consistently positive in Infantile haemangioma's in contrast to other vascular anomalies.

2. Vascular Malformations: They are non-cancerous abnormalities in the blood vessels. They can occur in the oral cavity and manifest as enlarged, dilated blood vessels. There are different types of vascular malformations, including capillary malformations (port wine stains), venous malformations, arteriovenous malformations and lymphatic malformations. In contrast to haemangioma's these lesions are present at birth and persist all through life. Port wine stain remains the commonly occurring malformation. Port wine stains commonly occur with Struge Weber syndrome where intracranial lesions are present. Arteriovenous malformations are high flow lesions due to arterial and venous communication and clinically although present from birth are not significantly visible till adulthood. As a High Flow Lesion a palpable "thrill" or "bruit" is of noticeable. Vascular malformations do not show active endothelial cell proliferation².

Pyogenic Granuloma: Also known as Lobular Capillary Hemangioma, is a common benign vascular tumour that can occur in the oral cavity. It appears as a reddish, elevated and friable growth often associated with trauma or irritation. This lesion commonly affects the gingiva and can bleed easily. *Lobular Capillary Hemangioma*: Histopathology: Small uniform vascular channels with lobular architecture often surrounding a large central vessel. Large vessels lined with prominent endothelial cells exhibit "tufting" and mitotic activity often. Need to be separated from lobular capillary haemangioma are nasopharyngeal angiofibroma, hemangiopericytoma and angiosarcoma. Angiofibroma contains thick papillary blood vessels and a cellular fibroblast proliferation which can be differentiated from LCH which has small vessels and lobular pattern. Meanwhile nuclear atypia and infiltrative pattern present in angiosarcoma is absent in LCH. The endothelial cell is attenuated in Hemangiopericytoma compared to more prominent endothelial cells of LCH.

3. Kaposi's Sarcoma: while this lesion primarily occurs on the skin it can also develop in the oral cavity. Kaposi's sarcoma is associated with human herpesvirus infection and typically presents as purplish or reddish or reddish lesions on the mucous membranes, including the palate, gingiva, tongue, or lips. It is more commonly seen in individuals with immunosuppression, such as those with HIV/AIDS. Histopathologically, the three stages of patch, plaque and nodular. Patch stage is characterised by the proliferation of miniature vessels. Presence of "Promontory Sign" i.e the protrusion of a new blood vessel in an already existing blood vessel is commonly seen in these lesions³.
4. Hemangiopericytoma: Although rare, hemangiopericytoma can occur in the oral cavity. These tumors arise from pericytes, cells that surround the blood vessels. In the oral cavity, hemangiopericytomas can manifest as a soft, compressible mass and may cause symptoms like swelling or pain. In 1942, Stout reported the first case of hemangiopericytoma of the oral cavity. Almost 16 to 25% cases of hemangiopericytoma occurs in the head and neck region. Microscopically this lesion contains plump endothelial nuclei in a background of dense spindle cells. The staghorn pattern of the this lesion gets its appearance from the branching pattern of vascular channels. Reticulin stain lesional vessels with endothelial cells as a layer with the pericytes lying outside the basal lamina⁴.

5. EpithelioidHaemangioendothelioma: Epithelioidhaemangioendothelioma is a low to intermediate grade vascular tumour that can affect various organs including the oral cavity. It may appear as a nodular or infiltrative lesion and can cause local destruction and ulceration.

A proliferative and vascular lesion, with intermediate aggressiveness. Histopathologically it is usually biphasic with venous and capillary proliferation. Can contain occasional phleboliths. These vessels are intermixed with sheets of epithelioid or spindle shaped mesenchymal cells with minimal dysplasia. These cells stain with UlexEuropeus and Factor 8 association in the cytoplasm. Vascular malformations do not show active endothelial cell proliferation. Kaposiformhemangioendothelioma consists of uniform spindle cells with pale eosinophiliccytoplasm and elongated nuclei in conjunction with slit like vascular channels similar to those of Kaposi's sarcoma⁵.

IV. Conclusion:

This review gives a brief overview of vascular tumors that can occur in the oral cavity. It is important to note that proper diagnosis and management of these tumors should be carried out by healthcare professionals with expertise in oral medicine, oral and maxillofacial surgery, or oral pathology.

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